Stress and Hardiness in US Peacekeeping Soldiers

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ABSTRACT

Studies of US soldiers in the Gulf War identified personality hardiness as an important variable contributing to soldier health and well-being in the face of war-related stress. “Hardiness” describes a characteristic resilient personality style marked by a high sense of control, commitment, and challenge. In a wide range of studies, personality hardiness distinguishes individuals who remain healthy under stress from those who suffer a variety of stress-related problems. The present paper examines the special case of soldiers involved in peacekeeping and contingency operations, and explores the possible stress moderating effects of the hardy personality style in US peacekeeping soldiers. Results from recent operations in Croatia, Saudi Arabia and Bosnia confirm that soldiers high in personality hardiness show fewer stress-related ill-effects than those low in this trait. Hardy soldiers appear to be psychologically well-equipped for peacekeeping operations, which frequently entail situations of great ambiguity, isolation, and restrictions over movement and action (powerlessness). This paper presents illustrative findings, and suggests some policy implications.
Introduction

Despite the well-established link between psychosocial stress and health, it is still true that individuals respond differentially to stress, and many remain healthy under high stress conditions. The observation that some corporate executives and managers remained healthy, while others got sick as a function of stressful work and life events led Kobasa (1979) to formulate the concept of personality “hardiness” as a possible explanation for individual differences in response to stress. Personality hardiness has proven to be a significant moderator of stress in a variety of occupational groups (e.g., Bartone, 1989; Contrada, 1989; Kobasa, Maddi & Kahn, 1982; Roth et. al, 1989; Wiebe, 1991). In military groups, hardiness was identified as a significant moderator of combat exposure stress in US Gulf War soldiers (Bartone, 1993). Hardiness has also been identified as an important predictor of health under stress for Army casualty assistance workers and death notification officers following a peacetime air disaster (Bartone et. al., 1989; Bartone, 1996).

Studies on stress and health in peacekeeping operations are beginning to appear, and suggest that peacekeeping duty is highly stressful. While the stressors of peacekeeping may be somewhat different than those of war, they can be just as severe in terms of health consequences. For example, the Norwegians report a significant increase in the risk of suicide and violent death among veterans of their Lebanon peacekeeping force (UNIFIL; HQ Defense Command Norway, 1992). The present report provides findings from recent US military peacekeeping and contingency operations showing that here also, personality hardiness appears as an important predictor of continued good health and adjustment under stress.

Personality Hardiness

Originally developed by Salvatore Maddi and Suzanne Kobasa Ouellette (Maddi, 1967, 1970; Kobasa, 1979; Maddi & Kobasa, 1984), the concept of personality hardiness is grounded in existential psychology and personality theory (Kobasa & Maddi, 1977; Kierkagaard, 1954; Keen, 1970). Theoretically, as a function of their psychosocial developmental history, hardy (authentic) persons possess a greater openness to experience on a variety of levels, a higher sense of control and mastery, and increased confidence and commitment to life, work, self and others. Conceptually, “hardiness” is thus an individual differences variable that develops early in life and is reasonably stable over time, though amenable to change under certain conditions (Maddi & Kobasa, 1987). Hardy persons have a high sense of life and work commitment, greater sense of control, and are more open to change and challenges in life. They tend to interpret stressful and painful experiences as a normal part of life, which is overall interesting and worthwhile. The critical implication for military stress research is that hardy troops are not as easily threatened or psychologically disrupted by ordinarily painful aspects of the human condition. This theoretical underpinning sets hardiness apart from such superficially related constructs as "optimism" (Scheier & Carver, 1985) or "hope" (Snyder et. al. 1991), which generally posit a much simpler process whereby stressful or painful experiences are disregarded or ignored. Of particular relevance to military operations is Maddi's suggestion (1976) that the hardy person is not as vulnerable to the stress of exposure to death.
Perhaps partly as a function of its theoretical depth and complexity, the construct of hardiness has proved difficult to measure (Funk & Houston, 1992). Current and recent US Army studies utilize a short 15-item hardiness scale with good demonstrated reliability and validity. This 15-item scale includes positively and negatively keyed items covering the three conceptually important Hardiness facets of commitment, control, and challenge. In a sample of 700 Army reservists in medical units mobilized for the Gulf War, Cronbach's alpha coefficient for the total hardiness measure is .83, and for the facets, .77 (commitment), .71 (control), and .70 (control). Similar internal consistency coefficients are seen with other samples. Recent data from an Army unit deployed to Saudi Arabia show a 3-month test-retest reliability coefficient of .59 (N=170). This short hardiness scale has demonstrated appropriate criterion-related and predictive validity in several samples, with respect both to health and performance under high-stress conditions. For example, scores on this hardiness measure are predictive of illness/symptom indicators and health behaviors in a large group (N=787) of men and women Army Reservists mobilized for the Gulf War. Also, as hardiness theory would predict, Army Special Forces candidates who score high on this measure are more likely to succeed in a rigorous and highly stressful selection course.

Below are presented some representative findings showing personality hardiness not only predicts health in soldiers, but also interacts with combat and non-combat stress in a manner that suggests hardiness is a potent stress moderator or buffer.

Results 1: Gulf War, Operation Desert Shield/Storm

As part of a larger research effort, post-combat debriefing surveys were administered to a large group (N=8,632) of Gulf War veterans 3-12 months after the war (1991). Measures included a 31-item combat exposure inventory, personality hardiness, and the Impact of Events Scale (IES; Horowitz, Wilner & Alvarez, 1979). A short pre-combat survey had been administered to a smaller group of soldiers (N=833) just prior to the ground war offensive. This made it possible to control for pre-combat generalized anxiety levels in subsequent analyses for those soldiers who completed both surveys (N=777). This eliminates the possible influence of pre-existing anxiety or neuroticism on later symptoms reports (Costa & McCrae, 1985), thus providing a more stringent test of the effects of combat exposure itself. As Table 1 shows, pre-combat anxiety is a significant predictor of post-combat IES scores. With the effects of pre-combat anxiety removed, the remaining significant effects in the model are for Combat Exposure and a Combat Exposure X Hardiness interaction term. In order to visualize the interaction effect, Figure 1 plots the regression lines for high and low hardy soldiers (median split). Seen in this way, it is clear that hardiness has its greatest influence on symptoms under high stress (combat exposure) conditions. These findings are supportive of a "stress-buffering" hypothesis, wherein persons who possess the personality style of hardiness are less vulnerable to the disruptive effects of severe stress.

Results 2: US Medical Unit in Croatia (UNPROFOR)

In April of 1993 a US Army medical task force of about 300 personnel was organized and deployed to Croatia to provide medical support to all UNPROFOR soldiers. This unit was studied over the duration of the 6-month deployment using interviews, field observations and questionnaires (Bartone, Vaitkus & Adler, 1994). Major stressors related to isolation and worries about family welfare, boredom, ambiguities in the mission and command structure, and powerlessness (Bartone &
Adler, 1994). Stressors were grouped into those that were work and mission related, and those that were family related. Regression analyses show hardiness predicts both depression and symptoms reports, and that hardiness interacts with family stressors to predict symptoms (Table 2).

Results 3: Saudi Arabia Study

In March 1995 a US Army Patriot Missile task force deployed to Saudi Arabia for a regular 6-month contingency mission rotation. This unit was also studied over time using interviews, field observations and questionnaires. A mid-deployment survey administered in the field provided data on mission stressors, hardiness and health. Health measures included a short form of the CES-D, and a brief psychiatric symptoms scale derived from the “American Soldier” studies in World War II (Stouffer et al, 1949), and used in a variety of studies since 1985. This symptoms scale covers the domains of somatic complaints, anxiety, and depression. Table 3 shows regression results in which depression is predicted by stress as a main effect, and by a stressXhardiness interaction term. Table 4 shows similar findings predicting psychiatric symptomatology, and Figure 2 plots the Stress X Hardiness interaction effect on symptoms.

Results 4: Bosnia Study

The US Army Medical Research Unit-Europe is now engaged in a large-scale study to identify sources of stress, health and adaptation is soldiers deployed for Operation Joint Endeavor (Bosnia). A pre-deployment survey was administered to over 3,000 soldiers before they deployed from home bases in Germany, providing data on pre-deployment stressors and some baseline data on health. Recently, a mid-deployment survey was administered to approximately 800 soldiers in the theater. Preliminary results on the first group of 100 matched-cases shows that hardiness interacts with pre-deployment stressors to predict symptoms reports later in time (Table 5). Figure 3 plots the interaction effect of Stress X Hardiness measured in the pre-deployment phase on later symptoms levels, assessed about 6 months later. This provides further support for the stress-buffering role of hardiness.

Implications

Selection: While it is not always possible to be selective when configuring forces for deployment, some situations and missions do permit for selection to occur. The consistent and positive findings regarding the stress-buffering role of hardiness suggest that hardiness is one characteristic among several that should be considered when selection is an option.

Training: Many military forces, including the US, are paying more attention to training for stress management and psychological resiliency among troops scheduled to deploy. Work by Maddi and colleagues with a variety of occupational groups suggests that hardiness can be taught or shaped to some degree through special stress management programs (personal communication). It should be possible to build new military programs, or integrate into existing stress management training techniques aimed at building up the individual’s sense of commitment, control, and
openness to new experience (challenge).

Organizational Policies: The social climate in military organizations is heavily dependent on leader programs and policies. Leaders can in principle raise the level of hardy cognitive interpretations and behaviors with enlightened policies that foster these kinds of responses. For example, providing increased recognition and praise to soldiers for their work and contributions to the mission should increase the overall level of commitment. Likewise, a psychologically beneficial increase in sense of control may result when leaders give subordinates more power and autonomy in their jobs, and refuse to “micro-manage”. And leaders who model positive responses to change and unpredictability on military operations, and also do not withhold key information when they have it, are likely to see an increase in trust and openness to change among their troops.

REFERENCES


### Table 1: Stepwise regression: predicting Impact of Events (IES)

<table>
<thead>
<tr>
<th>Predictor</th>
<th>R-Square</th>
<th>Beta</th>
<th>T</th>
<th>p&lt;</th>
</tr>
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<tbody>
<tr>
<td>Combat stress</td>
<td>.08</td>
<td>.83</td>
<td>8.2</td>
<td>.0001</td>
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<tr>
<td>T1 Anxiety</td>
<td>.15</td>
<td>.22</td>
<td>6.8</td>
<td>.0001</td>
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<tr>
<td>Stress X Hardy</td>
<td>.18</td>
<td>-.56</td>
<td>-5.6</td>
<td>.0001</td>
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</table>

Model: F(3, 774) = 56.9, p<.0001  
N=777 US Army soldiers, Gulf War

### Table 2: Family stress & Hardiness predicting symptoms

<table>
<thead>
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<th>Predictor</th>
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<th>Beta</th>
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<tr>
<td>Stress</td>
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<td>Stress X Hardy</td>
<td>.24</td>
<td>-.13</td>
<td>-4.1</td>
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Model: F(2, 123) = 20.1, p<.0001  
N=125 US Army medical workers, deployed to Croatia (UNPROFOR, 1993)
### Table 3: Deployment Stress & Hardiness predicting Depression

<table>
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<tr>
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Model: F(2, 168) = 44.8, p<.0001  

### Table 4: Deployment Stress & Hardiness predicting Symptoms

<table>
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<th>T</th>
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Model: F(2, 169) = 29.7, p<.0001  

### Table 5: Pre-deployment Stress & Hardiness predicting later Symptoms

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<tr>
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Model: F(2, 99) = 8.2, p<.0005  
N=101 US Army personnel deployed to Bosnia-Croatia (1996)